

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A motor controller comprising:
an inverter circuit for driving a brushless motor by applying a sinusoidal wave thereto;
and
a control unit for ~~controlling~~ estimating the rotational speed and rotational phase of the brushless motor ~~by controlling the phase of the motor current of the brushless motor through the inverter circuit~~ based on the motor current of the brushless motor, whereby rotational speed fluctuation caused by load torque fluctuation is computed and the current phase of the brushless motor is controlled so as to restrict said rotational speed fluctuation.
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Currently Amended) The motor controller according to claim 1, wherein the control unit controls the phase and amplitude of the motor current of the ~~brushless~~ brushless motor, thereby ~~controlling~~ restricting the rotational speed and fluctuation of the ~~brushless~~ brushless motor.
6. (Cancelled)
7. (Original) The motor controller according to claim 5, further comprising a rectifier for rectifying an a.c. power output from an a.c. power source to output to the inverter circuit,
wherein the control unit controls the amplitude of the motor current according to the absolute value of the output voltage of the a.c. power source.
8. (Original) The motor controller according to claim 1, further comprising a capacitor interposed between d.c. power input terminals of the inverter circuit.
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)

12. (Cancelled)

13. (New) A motor controller comprising:

a power converter for converting an a.c. power output from an a.c. power source into a d.c. power;

an inverter circuit for supplying the d.c. power obtained through the conversion by use of the power converter to a brushless motor, thereby driving the brushless motor;

a capacitor connected between d.c. power input terminals of the inverter circuit; and

a control unit for controlling the rotational speed of the brushless motor by controlling the motor current of the brushless motor through the inverter circuit,

wherein the control unit controls the motor current so as to restrict the rotational speed fluctuation of the brushless motor caused by load torque fluctuation and controls a current output from the a.c. power source based on the comparison between the amplitude of the motor current and the average of the motor current.

14. (New) The motor controller according to claim 13, wherein the control unit controls the current output from the a.c. power source such that during the period when the amplitude of the motor current is smaller than the average of the motor current, the capacitor is charged, and during the period when the amplitude of the motor current is larger than the average, the capacitor discharges electricity.

15. (New) The motor controller according to claim 14, wherein the power converter is a rectifier, wherein a switching element is serially connected to the capacitor between the d.c. power input terminals of the inverter circuit, and wherein the control unit controls the current output from the a.c. power source by turning the switching element ON and OFF.

16. (New) The motor controller according to claim 14, wherein the control unit controls the current output from the a.c. power source such that during the period when the amplitude of the motor current is smaller than the average of the motor current, said amplitude decreases, and during the period when the amplitude of the motor current is larger than the average of the motor current, said amplitude increases.

17. (New) The motor controller according to claim 13, wherein the control unit controls the phase of the motor current so as to restrict the rotational speed fluctuation of the brushless motor caused by load torque fluctuation.

18. (New) The motor controller according to claim 1, wherein the brushless motor drives a load the torque of which fluctuates so as to have one peak per rotation of the brushless motor.

19. (New) A compressor having the brushless motor controlled by the motor controller of claim 18, as a driving source.

20. (New) An air conditioner having the compressor of claim 19, as refrigerant compressing means.

21. (New) A refrigerator having the compressor of claim 19, as refrigerant compressing means.